Play with words

Problem Statement

Shaka and his brother have created a boring game which is played like this:

They take a word composed of lowercase English letters and try to get the maximum possible score by building exactly 2 **palindromic subsequences**. The score obtained is the product of the length of these 2 subsequences.

Let's say A and B are two subsequences from the initial string. If A_i & A_j are the smallest and the largest positions (from the initial word) respectively in A ; and B_i & B_j are the smallest and the largest positions (from the initial word) respectively in B, then the following statements hold true:
$A_i \le A_j$,
$B_i \le B_j$, &
$A_j < B_i$.
i.e., the positions of the subsequences should not cross over each other.

Hence the score obtained is the product of lengths of subsequences A & B. Such subsequences can be numerous for a larger initial word, and hence it becomes harder to find out the maximum possible score. Can you help Shaka and his brother find this out?

Input Format
Input contains a word S composed of lowercase English letters in a single line.

Output Format
Output the maximum score the boys can get from S.

Constraints
$1 < |S| \le 3000$
each character will be a lower case english alphabet.

Sample Input:

```
eeegeeksforskeeggeeks
```

Sample Output:

```
50
```

Explanation

A possible optimal solution is **eee**-g-**ee**-ksfor-**skeeggeeks** being **eeeee** the one subsequence and **skeeggeeks** the other one. We can also select **eegee** in place of **eeeee**, as both have the same length.